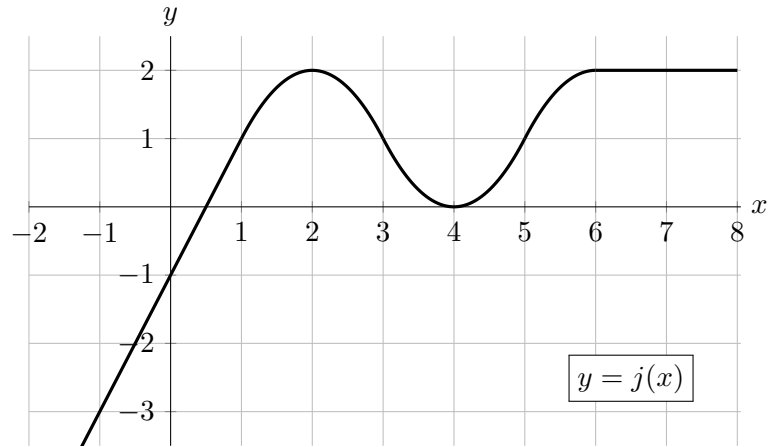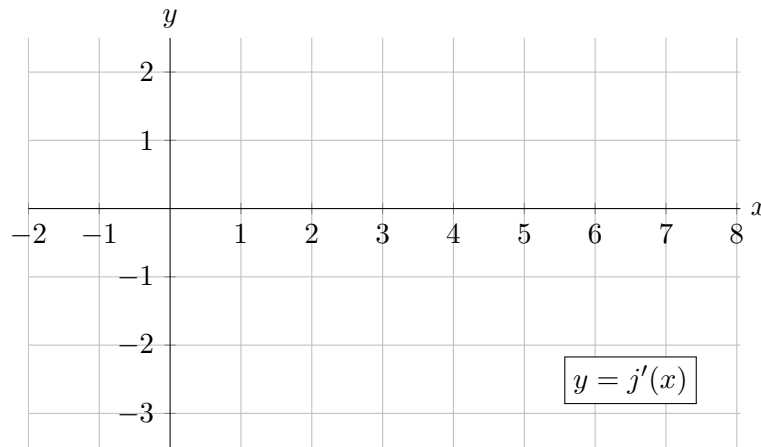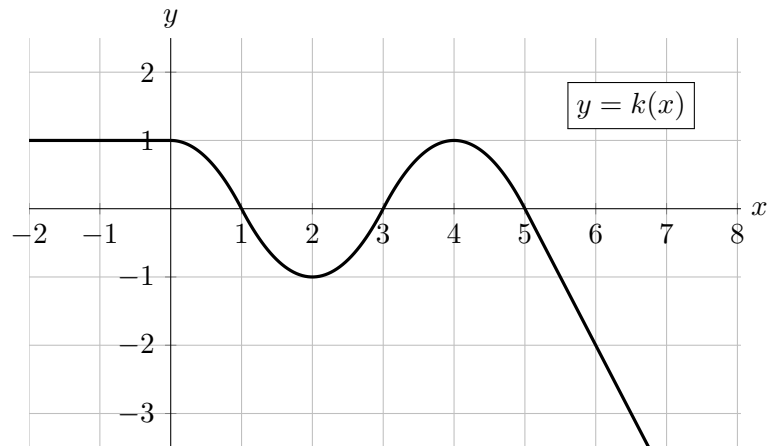**8.** [11 points] A portion of the graph of the function $j(x)$ is shown below. Note that $j(x)$ is linear for $x < 1$ and $x > 6$.

$y = j(x)$

a. [7 points] On the axes below, carefully sketch the graph of $j'(x)$, the derivative of $j(x)$, on the interval $-2 < x < 8$. Be sure that your graph carefully indicates where $j'(x)$ is zero, positive, and negative, and where $j'(x)$ is increasing, decreasing, and constant.

$y = j'(x)$

b. [4 points] Shown below is a portion of the graph of a function $k(x)$ which can be obtained from $j(x)$ through one or more graph transformations. Find a formula for $k(x)$ in terms of $j(x)$.

$y = k(x)$

Answer: $k(x) =$ _____